This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims

Claim 1 (Canceled).

Claim 2 (Currently Amended). A method for enhancing the longevity of living cells comprising:

adding nonagglomerated, ultra fine, engineered nanoparticles of Cerium Oxide of the size approximately 2 to approximately 10 nm to cultures of living cells; and

enhancing lifespan of the living cells when the cerium oxide particles function as a regenerative free radical scavenger.

Claims 3 -22 (Canceled).

Claim 23 (new). The method of Claim 2, wherein the engineered nanoparticles of cerium oxide contain a plurality of oxygen vacancies in a lattice structure thereof.

Claim 24 (new). The method of Claim 2, wherein the oxygen vacancies in the lattice structure support biological activity as free radical scavengers.

Claim 25 (new). The method of Claim 2, wherein acting as a regenerative free radical scavenger includes the step of: regenerating cerium oxide particles after a radical scavenging event has occurred, causing said particles to be biologically available for multiple rounds of radical scavenging.

Claim 26 (new). The method of Claim 2, wherein a single application of nanoparticles remains active in the culture of living cells for more than one free radical scavenging event.

Claim 27 (new). A method for enhancing the longevity of living cells comprising:

adding one single application of non agglomerated, ultra fine, engineered nanoparticles of Cerium Oxide of the size approximately 2 nm to approximately 10 nm wherein the nanoparticles contain a plurality of oxygen vacancies in a lattice structure and the oxygen vacancies support biological activity as free radical scavengers to cultures of living cells; and

enhancing a lifespan of living cells when the cerium oxide particles function as a regenerative free radical scavenger wherein after a free radical scavenging event has occurred, the cerium oxide particles remain biologically available for more than one free radical scavenging event.